

Claims

1. An intervertebral prosthesis comprising a first plate and a second plate, wherein each plate comprises a substantially flat bone engaging surface with a macro-textured surface capable of rasping an interstitial bone surface, and one or more lugs which on intervertebral insertion of the prosthesis abut a non-interstitial surface of the vertebrae to limit insertion of the prosthesis.
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2. The intervertebral prosthesis of claim 1, wherein the macro-textured surfaces are disc shaped.
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3. The intervertebral prosthesis of any one of the preceding claims, that does not comprise any fixing means or holes for receiving such fixing means for fixing the prosthesis to a non-interstitial surface of a vertebra.
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4. The intervertebral prosthesis of any one of the preceding claims, wherein each plate comprises a non-textured area located between the macro-textured surface and the one or more lugs.
- 20 5. The intervertebral prosthesis of any one of the preceding claims, wherein the non-textured area is approximately 0.4 to 1 mm lower than the macro-textured surface.
6. The intervertebral prosthesis of any one of the preceding claims, wherein the non-textured area forms a border between the macro-textured surface and the one or more lugs having a variable width of between 2 and 10 mm.
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7. The intervertebral prosthesis of any one of the preceding claims, wherein the one or more lugs are positioned on one side of each plate.
- 30 8. The intervertebral prosthesis of any one of the preceding claims, wherein each plate comprises two lugs.
9. The intervertebral prosthesis of any one of the preceding claims, wherein the edge of each plate that is inserted into the intervertebral gap is termed the posterior edge and the opposing edge is termed the anterior edge, and wherein the lugs are positioned on the anterior edge of each plate.
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10. The intervertebral prosthesis of claim 9, wherein there is a chamfer at the posterior edge of each plate of the intervertebral prosthesis to assist with the insertion of the intervertebral prosthesis.
- 5 11. The intervertebral prosthesis of any one of the preceding claims, wherein the lugs are capable of engaging an insertion tool.
12. The intervertebral prosthesis of any one of the preceding claims, wherein the lugs are prism shaped.
- 10 13. The intervertebral prosthesis of claim 12, wherein the each prism shaped lug is orientated so that its flat base faces anteriorly and the posteriorly facing apical edge will engage with the anterior non-interstitial surfaces of the vertebrae on intervertebral insertion.
- 15 14. The intervertebral prosthesis of any one of the preceding claims, wherein the first and second plates are articulated together so as to provide a physiological range of motion between the plates.
- 20 15. The intervertebral prosthesis of any one of the preceding claims, wherein the macro-textured surface comprises pockets or pits having a radius of generally greater than 0.4 mm.
- 25 16. The intervertebral prosthesis of any one of the preceding claims made from stainless steel, titanium, titanium carbide, zirconium or any biocompatible equivalent.
- 30 17. An abrasive trial device having substantially the same dimensions as the intervertebral prosthesis according to any one of claims 1 to 16, and including one or more lugs that correspond in size, shape and position to those of the intervertebral prosthesis of any one of claims 1 to 16, wherein the surfaces of the plates of the trial device have an abrasive surface for smoothing the vertebral end plates.
- 35 18. The abrasive trial device according to claim 17, wherein the abrasive surfaces comprise a series of cutting edges or a diamond studded surface, to produce a file or fine rasp-like surface.
19. The abrasive trial device according to claim 17 or claim 18, which can be connected to an insertion tool via the one or more lugs.

20. The abrasive trial device according to claim 17 or claim 18, which is formed as a single unit with an elongated handle enabling its insertion into an intervertebral space.
- 5 21. A sizing trial device having substantially the same dimensions as the intervertebral prosthesis of any one of claims 1 to 16, and comprising one or more prism shaped lugs that correspond in size, shape and position to those of the intervertebral prosthesis according to claim 12.
- 10 22. An insertion tool comprising:
a shaft having a proximal end and a distal end wherein the proximal end comprises a grip and the distal end comprises two prosthesis engaging arms that are biased apart; and
a cylinder having a proximal and distal end in rotational engagement around the
15 main shaft,
wherein the distal end of the cylinder contacts the prosthesis engaging arms, and
wherein on rotation of the cylinder in a distal direction, the distal end of the cylinder forces the prosthesis engaging arms together to grip an intervertebral prosthesis according to any one of claims 1 to 16.
- 20 23. A kit comprising one or more intervertebral prostheses according to any one of claims 1 to 16, one or more abrasive trial devices according to any one of claims 17 to 20 and one or more sizing trial devices according to claim 21.
- 25 24. The kit according to claim 23 which additionally comprises the insertion tool according to claim 22.
25. The kit according to claim 23 or claim 24, which comprises a series of different sized intervertebral prostheses as well as a corresponding series of different sized abrasive
30 trial devices and sizing trial devices.
26. A method for inserting the intervertebral prosthesis according to any one of claims 1 to 16 comprising:
- 35 preparing the vertebral end plates between which the intervertebral prosthesis is to be inserted, by inserting and moving the abrasive trial device according to any one of claims 17 to 20 within the intervertebral space so as to smooth the end plates and to ensure

that the one or more lugs of the trial device engage a non-interstitial surface of the vertebrae; and

inserting the intervertebral prosthesis into the prepared intervertebral space; and

5 moving the prosthesis within the intervertebral space to ensure that the macro-textured surface engages the vertebral end plates.

27. A method for removing the intervertebral prosthesis according to any one of claims 1 to 16 from an intervertebral space comprising passing a fine chisel or osteotome between the macro-textured surface of each end plate and the vertebral end plates.

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28. The intervertebral prosthesis of any one of claims 1 to 16 for use in therapy.

29. The abrasive trial device according to any one of claims 17 to 20 or the sizing trial device according to claim 21 for use in therapy.

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